I. PROJECT PLANNING (30%) - This area assesses the candidate's ability to gather available technical and regulatory information to develop scope of work based on project needs and local, state, and federal regulatory requirements.

Job Task	*Knowledge*
T1. Determine scope of services based upon available geologic data, prior and existing land use, and client objectives. T6. Perform field reconnaissance to observe local conditions that may affect proposed scope of work. T12. Perform field reconnaissance to observe geologic conditions that may affect proposed scope of work. T18. Identify field methods consistent with health and safety requirements. T24. Identify field methods consistent with environmental requirements. T30. Define project quality assurance and quality control Measures T36. Establish data quality objectives for sampling and analysis. T42. Identify potential health and safety hazards. T47. Identify regulatory permits and requirements for field testing, exploration, and disposal of investigation-derived waste. T51. Select exploration techniques to investigate surface and subsurface conditions. T55. Select locations for surface exploration and sampling. T59. Select locations and depths for subsurface exploration and sampling. T63. Identify potential sources of contamination based on review of present and past site usage. T67. Identify physical and chemical tests to characterize site. T71. Identify need to perform geologic assessments in conformance with legal/regulatory requirements. T79. Select applicable geologic models.	K6. Knowledge of geologic and geomorphic features depicted on topographic and geologic maps. K12. Knowledge of sources for unpublished and published imagery and photographs. K18. Knowledge of sources of unpublished and published information pertinent to geologic investigations. K59. Knowledge of standards of care for site investigation. K64. Knowledge of standards of care for site mitigation. K76. Knowledge of drilling methods and applications. K85. Knowledge of health and safety factors pertaining to site investigation. K88. Knowledge of potential impact of local codes on site investigations. K90. Knowledge of state and federal regulations to safeguard personnel during exploration and construction. K94. Knowledge of regulatory requirements for permitting, construction, destruction, and abandonment of borings and wells. K112. Knowledge of regulatory agencies that have jurisdiction over water quality protection. K115. Knowledge of federal and state drinking water standards. K118. Knowledge of federal and state waste discharge requirements. K124. Knowledge of agencies with jurisdiction over water supply. K137. Knowledge of regulations pertaining to waste disposal closure plans. K143. Knowledge of methods for onsite waste disposal or containment. K145. Knowledge of regulations for landfill closure. K147. Knowledge of regulations regarding location and operation of waste disposal and treatment facilities. K149. Knowledge of guidelines for preparing geologic studies and reports. K151. Knowledge of standards of practice for environmental impact assessment.

II. DATA COLLECTION (23%) – This area assesses the candidate's ability to identify soil characteristics and groundwater conditions from pertinent sources of geologic, hydrogeologic, and land use data.

Job Task	*Knowledge*
T2 Obtain historical groundwater data. T19. Obtain representative samples for site characterization. T25. Obtain samples for laboratory testing. T31. Describe surface soil, sediment, and rock materials. T37. Identify areas of collapsible, compressive, and expansive soils. T43. Identify characteristic features and types of mass wasting. T48. Identify areas of subsidence. T52. Describe subsurface structure and stratigraphy in borings and trenches. T56. Map geomorphology, lithology, and geologic structures. T60. Conduct field tests to determine physical and chemical properties of site materials. T64. Describe mineralogical, pedological, and lithological characteristics of surface and subsurface materials. T68. Conduct field tests to describe vadose zone characteristics. T72. Conduct field tests to describe saturated zone characteristics. T76. Install wells in multiple aquifer settings. T80. Locate existing wells.	K60. Knowledge of techniques for logging trenches and downhole logging of large diameter borings. K65. Knowledge of field safety methods for logging trenches and downhole logging of large diameter borings. K80. Knowledge of drilling and well completion techniques to prevent cross-contamination of aquifers. K116. Knowledge of field evidence of seismic shaking. K119. Knowledge of field evidence of fault rupture. K125. Knowledge of applications of geomorphology to geologic hazard studies.

III. GEOLOGIC ANALYSIS (30%) – This area assesses the candidate's ability to depict geologic site conditions on maps and cross-sections, characterize hydrogeologic conditions, develop hydrogeologic conceptual models, assess chemical properties of soil and groundwater, and assess problematic soils, slope stability, and seismic hazards.

Job Task	*Knowledge*
T3. Assess vadose zone and groundwater interaction. T8. Assess nature and extent of soil and groundwater contamination from chemical data. T10. Describe primary and secondary faulting and fault-related features. T16. Evaluate stability of natural slopes. T20. Develop groundwater potentiometric maps. T26. Develop soil, sediment, and groundwater contaminant distribution maps. T28. Identify water resource boundaries and zones. T32. Develop volume and mass estimates of contaminated groundwater and soil. T34. Develop geologic maps and cross-sections. T49. Identify potential receptors of contamination. T53. Evaluate chemical properties of geologic materials from field and laboratory test results. T57. Evaluate potential for adverse impacts from geologic conditions or hazards. T61. Analyze borehole geophysical logs to determine subsurface conditions. T65. Evaluate physical and mechanical properties of geologic materials from field and laboratory test results. T69. Analyze monitoring and survey data to assess vertical and horizontal ground movement. T81. Determine aquifer characteristics using hydrogeologic data.	K10. Knowledge of effects of proposed grading on slope stability and erosion. K22. Knowledge of grading and excavation techniques. K26. Knowledge of groundwater basin characteristics. K31. Knowledge of groundwater resource management practices. K78. Knowledge of the relationship between fresh water and saline water in aquifers. K138. Knowledge of conditions that affect slope stability. K146. Knowledge of state guidelines for evaluating seismic hazards. K148. Knowledge of methods to evaluate seismic hazards. K152. Knowledge of methods to assess regional seismicity and tectonics. K154. Knowledge of regulations and guidelines for fault evaluations. K156. Knowledge of different regional fault systems and tectonic frameworks.

III. GEOLOGIC ANALYSIS (30%) – This area assesses the candidate's ability to depict geologic site conditions on maps and cross-sections, characterize hydrogeologic conditions, develop hydrogeologic conceptual models, assess chemical properties of soil and groundwater, and assess problematic soils, slope stability, and seismic hazards.

Job Task	*Knowledge*
T73. Calculate recharge rates and permeability from infiltration/percolation data. T77. Determine vadose zone characteristics using physical and chemical data. T84. Evaluate groundwater quality, supply, discharge, and recharge. T86. Identify presence of faulting based on stratigraphic, paleoseismic, geomorphic, and historic evidence. T88. Identify age of fault rupture. T92. Describe fault type, direction, and displacement. T90. Determine age of geologic materials.	

IV. GEOLOGIC INTERPRETATION (9%) – This area assesses the candidate's ability to determine hydrogeologic, seismic, and earth material conditions.

Job Task	*Knowledge*
T4. Evaluate potential impact of subsidence. T39. Evaluate impact of natural and artificial water recharge on slope stability. T45. Identify features on aerial photographs or other remote sensing images that indicate areas of potential instability or fault activity. T62. Identify effects of coastal and stream erosion and/or deposition that may affect the site. T66. Identify effects of erosional and depositional processes on natural and graded areas. T82 Identify geologic parameters used in slope stability calculations.	K21. Knowledge of potential impact of fluid extraction on land subsidence. K57. Knowledge of slope stabilization techniques.

V. DESIGN (8%) – This area assesses the candidate's ability to mitigate or remediate site conditions related to proposed project.

Job Task	*Knowledge*
T5. Develop groundwater sampling and monitoring plans. T11. Design monitoring wells. T17. Develop remedial action plans for contaminated soil or groundwater. T23. Develop site investigation workplans.	K17. Knowledge of regulatory guidelines for setback of structures near active faults. K28. Knowledge of regulations pertaining to design, construction, and destruction of monitoring wells. K33. Knowledge of regulations pertaining to design of water supply wells. K38. Knowledge of requirements for site investigation workplan.